APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/834,658	04/16/2001	Sofia Yeung	50277-1010	3688

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DITTHAVONG & CARLSON, P.C.
10507 Braddock Rd., Suite A
Fairfax, VA   22032

EXAMINER
FLEURANTIN, JEAN B

ART UNIT	PAPER NUMBER
2172	9

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.		**Applicant(s)**
	09/834,658		YEUNG ET AL.
Office Action Summary	**Examiner**		**Art Unit**
	Jean B Fleurantin		2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 January 2003</u> .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>39-53</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>39-53</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

   If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____ .

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

   a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5)☐ Notice of Informal Patent Application (PTO-152)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6)☐ Other: .

DETAILED ACTION

Response to Amendment

1.   Claims 43-53 are added.

        Claims 39-53 are remained pending for examination.

Response to Arguments

2.   Applicant's arguments filed on 1/28/03 with respect to claims 39-53 have been fully

considered but are moot in view of the new ground(s) of rejection. Examiner discusses the new

added claims 43-53 in the following rejection.

Claim Rejections - 35 U.S.C. § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public
use or on sale in this country, more than one year prior to the date of application for patent in the United
States.

Claims 39-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Choy et al. (US

Patent Number 5,551,027)("Choy").

        As per claim 39, Choy teaches a method of exporting data from a table into a dump file

(thus, one or more partitions of a table may be stored in a single site, each partition of the table

typically is associated with a group of physical storage device; which is equivalent to exporting

from data from a table into a dump file)(see col. 2, lines 5-8), said table being subdivided into

number of partitions (thus, a database table is partitioned according to the content of its records;

which is equivalent to said table being subdivided into number of partitions)(see col. 7, lines 12-

15), as claimed said method comprises the steps of selecting a fewer number of partitions of the

table, than the number of partitions of the table, (thus, the selection predicates that were applied

to the global indexes must be rechecked later, i.e., when the records retrieved from the fast path

must be re-certified using the original search predicates, like other database objects the coarse

global index table can itself be partitioned if necessary; which is readable as a fewer number of

partitions of the table, than the number of partitions of the table)(see col. 9, lines 20-25). Further,

in column 11, lines 24 through 29, Coy teaches if there is a selection predicate on the partition

key that can be evaluated into partition identifiers then evaluate that predicate, if there is an

applicable and selective coarse global index available then obtain the qualified partition

identifiers from that coarse global index, sort the partition identifiers, remove the duplicates and

merge with the partition identifiers based on partition key; and

for each of the selected partitions of the table, storing in the dump file data contained in

said each of the selected partitions (thus, for data retrieval a non unique global index is used

primarily for target partition selection, the local results obtained from these target partitions are

then merged to form the actual result; which is readable as each of the selected partitions of the

table, storing in the dump file data contained in said each of the selected partitions)(see col. 11,

lines 55-58), wherein data contained in a partition of the table, that is not selected is not stored in

the dump file (thus, if the partition identifier list becomes too long, i.e., it is no longer selective,

the database management system may stop using the global index and release S-Locks if any are

held and proceed to broadcast the query instead, if the query is not partition selective, then let the

the partition identifier be logically the list of all partitions send the query to each identified

partition for evaluation; which is readable as data contained in a partition <u>of the table</u>, that is not

selected is not stored in the dump file)(see col. 11, lines 32-35).

As per claims 40 and 48, Choy teaches a method as claimed, wherein the fewer number of

partitions is exactly one (thus, one or more partitions of a table may be stored in a single site,

which is equivalent to wherein the fewer number of partitions is exactly one)(see col. 2, lines 5-

6).

As per claims 41 and 42, Choy teaches a computer readable medium bearing instructions

arranged, upon execution, as claimed the steps to cause one or more processors to perform (thus,

the motivations for horizontally partitioning a database object are to partition data among

multiple nodes or processors within a single database management system so as to facilitate

parallel processing of a database management system query; which is equivalent to one or more

processors to perform)(see col. 7, lines 21-24).

As per claim 43, Choy teaches a method of importing data from a dump file into a

relational database table (thus, one or more partitions of a table may be stored in a single site,

each partitions of a table typically is associated with a group of physical storage devices; which is

equivalent to wherein importing data from a dump file into a relational database table)(see col. 2,

lines 5-8), as claimed said method comprises the steps of retrieving from the dump file data

contained in selected partitions of a first relational database table (thus, for data retrieval a non

unique global index is used primarily for target partition selection, the local results obtained from

these target partitions are then merged to form the actual result; which is readable as retrieving

from the dump file data contained in selected partitions of a first relational database table)(see

col. 11, lines 55-58), wherein the selected partitions are a subset of a total number of partitions of

the first relational database table (thus, a table managed by a relational database management

system may be horizontally partitioned such that each record of the object is stored in one of the

many partitions of the object, each partition of the object is typically associated with a group of

physically storage that is disjoint from those of the other partitions; which is readable as wherein

the selected partitions are a subset of a total number of partitions of the first relational database

table)(see col. 7, lines 12-19); and

importing the data contained in selected partitions into corresponding partitions of a

second relational database table (thus, the selection predicates that were applied to the global

indexes must be rechecked later, i.e., when the records retrieved from the fast path must be

recertified using the original search predicates, like other database objects, the coarse global

index table can itself be partitioned if necessary; which is readable as importing the data

contained in selected partitions into corresponding partitions of a second relational database

table)(see col. 9, lines 20-25), wherein the corresponding partitions are a subset of a total number

of partitions of the second relational database table (thus, method involves creating a local index

table for each partition of the database and creating a coarse global index table containing one

unique global index entry for each distinct local index key value in each local index table, the

local index table contains one local index entry for each object of interest in the corresponding

partition of the table, each local index entry consists of an object identifier such as a record

pointer; which is readable as wherein the corresponding partitions are a subset of a total number

of partitions of the second relational database table)(see col. 8, lines 44-52).

As per claims 44 and 52, Choy teaches a method as claimed, wherein the subset of the

total number of partitions is exactly one (thus, one or more partitions of a table may be stored in

a single site, which is readable as wherein the subset of the total number of partitions is exactly

one)(see col. 2, lines 5-6).

As per claims 45 and 53, Choy teaches a computer readable medium bearing instructions

arranged, upon execution, as claimed the steps to cause one or more processors to perform (thus,

the motivations for horizontally partitioning a database object are to partition data among

multiple nodes or processors within a single database management system so as to facilitate

parallel processing of a database management system query, which is equivalent to one or more

processors to perform)(see col. 7, lines 21-24).

As per claim 46, Choy teaches a method of exporting data from a database object into a

dump file (thus, one or more partitions of a table may be stored in a single site, each partition of

the table typically is associated with a group of physical storage device; which is readable as data

from a database object into a dump file)(see col. 2, lines 5-8), as claimed said method comprises

the steps of said subdivided the database object into number of partitions (thus, a table managed

by a relational database management system may be horizontally partitioned such that each

record of the object is stored in one of the many partitions of the object; which is equivalent to

subdivided the database object into number of partitions)(see col. 7, lines 12-15);

selecting a fewer number of partitions than the number of partitions (thus, the selection

predicates that were applied to the global indexes must be rechecked later, i.e., when the records

retrieved from the fast path must be re-certified using the original search predicates, like other

database objects the coarse global index table can itself be partitioned if necessary; which is

readable as a fewer number of partitions than the number of partitions)(see col. 9, lines 20-25).

Further, in column 11, lines 24 through 29, Coy teaches if there is a selection predicate on the

partition key that can be evaluated into the partition identifiers then evaluate that predicate, if

there is an applicable and selective coarse global index available, then obtain the qualified

partition identifiers from that coarse global index, sort the partition identifiers, remove the

duplicates and merge with the partition identifiers based on partition key, if they exist; and

for each of the selected partitions, storing in the dump file data contained in said each of

the selected partitions (thus, for data retrieval a non unique global index is used primarily for

target partition selection, the local results obtained from these target partitions are then merged to

form the actual result; which is readable as for each of the selected partitions, storing in the dump

file data contained in said each of the selected partitions)(see col. 11, lines 55-58), wherein data

contained in a partition that is not selected is not stored in the dump file (thus, if the partition

identifier list becomes too long, i.e., it is no longer selective, the database management system

may stop using the global index and release S-Locks if any are held and proceed to broadcast the

query instead, if the query is not partition selective, then let the partition identifier be logically

the list of all partitions, send the query to each identified partition for evaluation; which is

readable as wherein data contained in a partition that is not selected is not stored in the dump

file)(see col. 11, lines 32-35).

As per claims 47 and 51, Choy teaches a method as claimed, wherein the database object

includes one of a relational database table, a database data container, and object oriented database

object class (see col. 7, lines 10-20).

As per claim 49, the limitations of claim 49 are rejected in the analysis of claim 45, and

this claim is rejected on that basis.

As per claim 50, Choy teaches a method of importing data from a dump file into a

database object (thus, one or more partitions of a table may be stored in a single site, each

partitions of a table typically is associated with a group of physical storage devices; which is

equivalent to wherein importing data from a dump file into a database object)(see col. 2, lines 5-

8), as claimed said method comprises the steps of retrieving from the dump file data contained in

selected partitions of a first database object (thus, for data retrieval a non unique global index is

used primarily for target partition selection, the local results obtained from these target partitions

are then merged to form the actual result; which is readable as retrieving from the dump file data

contained in selected partitions of a first database object)(see col. 11, lines 55-58), wherein the

selected partitions are a subset of a total number of partitions of the first database object (thus, a

table managed by a relational database management system may be horizontally partitioned such

that each record of the object is stored in one of the many partitions of the object, each partition

of the object is typically associated with a group of physically storage that is disjoint from those

of the other partitions; which is readable as wherein the selected partitions are a subset of a total

number of partitions of the first database object)(see col. 7, lines 12-19); and

importing the data contained in selected partitions into corresponding partitions of a

second database object (thus, the selection predicates that were applied to the global indexes

must be rechecked later, i.e., when the records retrieved from the fast path must be recertified

using the original search predicates, like other database objects, the coarse global index table can

itself be partitioned if necessary; which is readable as importing the data contained in selected

partitions into corresponding partitions of a second database object)(see col. 9, lines 20-25),

wherein the corresponding partitions are a subset of a total number of partitions of the second

database object (thus, method involves creating a local index table for each partition of the

database and creating a coarse global index table containing one unique global index entry for

each distinct local index key value in each local index table, the local index table contains one

local index entry for each object of interest in the corresponding partition of the table, each local

index entry consists of an object identifier such as a record pointer; which is readable as wherein

the corresponding partitions are a subset of a total number of partitions of the second database

object)(see col. 8, lines 44-52).

4.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Choy et al. US patent Number 5,960,194 relates to a multi-tiered indexing method
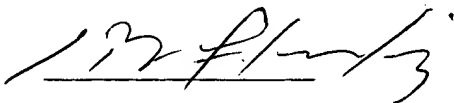
for partitioned data. Hallmark et al. US patent Number 6,014,656 relates to the field of database

management systems.

Conclusion

5.   Any inquiry concerning this communication from examiner should be directed to Jean

Bolte Fleurantin at (703) 308-6718. The examiner can normally be reached on Monday through

Friday from 7:30 A.M. to 6:00 P.M.

If any attempt to reach the examiner by telephone is unsuccessful, the examiner's

supervisor, Mrs. KIM VU can be reached at **(703) 305-8449.** The FAX phone numbers for the

Group 2100 Customer Service Center are: *After Final* **(703) 746-7238,** *Official* **(703) 746-7239,**

and *Non-Official (703) 746-7240.* NOTE: Documents transmitted by facsimile will be entered

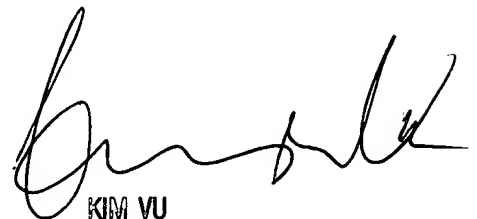as official documents on the file wrapper unless clearly marked *"DRAFT".*

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Group 2100 Customer Service Center receptionist whose telephone

numbers are **(703) 306-5631, (703) 306-5632, (703) 306-5633**.

Jean Bolte Fleurantin

April 3, 2003

JBF/

KIM VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100